

Work Order ID 148544***148544***

Page 1

Tuesday, July 05, 2016 3:02:58 PM

Item ID: D2362-3

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Step Support Bracket

Start Date: 7/27/2016 Start Qty: 4.00 ***4***

Cust Item ID:

Required Date: 8/3/2016 Req'd Qty: 4.00 ***4***

Customer:

Reference:

Approvals: Process Plan: DAS 21 Date: JUL 12 2016 Tooling: _____ Date: _____
QC: 9-89 Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D2362	Rev E1

100

0.07

100

HAAS CNC VERTICAL MACHINING #1

0.17

HAAS 1

Memo

HAAS CNC vertical machine #1

1- Mill as per Folio FA800 Rev: AA & Dwg D2362 Rev: E1 2-Deburr
per dwg D2362

<u>8</u>	<u>1</u>	DAS 33 9-89 <u>16/08/08</u>
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110

0.00

110

QC2- Inspect parts off machine FAI/FAIB

0.01

QC

Memo

Quality Control

<u>8</u>	<u>1</u>	DAS 33 9-89 <u>16/08/08</u>
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120

0.00

120

QC8- Inspect parts - second check

0.01

QC

Memo

Quality Control

<u>M.P. 16/08/09</u>	<u>8</u>	<u>0</u>	DAS 08 9-89
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NCR →

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: <u>148544</u> Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☒ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date: <u>16/08/08</u>		Step #: <u>100</u>		QTY Effective: <u>1</u>			MRB (QSI042) Approval DAS 16 9-89 <u>16/08/09</u>		
Description Work Order Deviation Hole Ø 0.557 drilled on wrong surface on part! Rc → used wrong offset on Machine No Reverification				Disposition scrap and replace D2265 M122090 1X				Completed By DAS 33 9-89 <u>16/08/09</u> Lead hand / Supervisor Approval Verification DAS 08 9-89 <u>16/08/09</u> QC / QA Coordinator Approval DAS 16 9-89 <u>16/08/09</u>	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☒ Operator ☒ Offset/Setup ☒ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☒ <u>5</u> BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☒ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☒ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : _____									

Work Order ID 148544

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148544

Page 2

Item ID: D2362-3

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N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

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Start Date: 7/27/2016 Start Qty: 4.00

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Required Date: 8/3/2016 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							
130	Small Fab					SB	B		16/08/08
Small Fab	Memo	0.02							
Small Fab	Deburr								
140		0.00							
140	White Gloss(Ref:4.3.5.1) per OSI005 4.3-Alum								
Powdercoat	1134792	0.03				82	6	lll	16/08/23
Powder Coating	Memo								
	START TIME: 2:30pm								
	FINISH TIME: 3:00pm								
	OVEN TEMPERATURE: 320°F								
150		0.00							
150	QC3- Inspect Part Finish								
QC		0.01							
Quality Control	Memo								

DAS
38
9-89

AUG 24 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Tuesday, July 05, 2016 3:02:59 PM

148544

Page 3

N900040100

Setup Start *NS1*

Stop *NS2*

4

Cust Item ID:

Start Date: 7/27/2016 **Start Qty:** 4.00

Required Date: 8/3/2016 **Req'd Qty:** 4.00

4

Customer:

Reference:

Run Start *NR1*

Approvals: **Process Plan:** **Date:** **Tooling:** **Date:**

Stop ***NR2***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

[illegible]

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
8105 2 S DUA				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

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Tuesday, July 05, 2016 3:02:59 PM

148544

Page 4

Item ID: D2362-3

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Step Support Bracket

Stop ***NS2***

Start Date: 7/27/2016 Start Qty: 4.00

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Cust Item ID:

Required Date: 8/3/2016 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

0.07

Quality Control



AUG 29 2016

DAS
21
9-89

AUG 26 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER :							

Picklist Print

Tuesday, July 05, 2016 3:02:58 PM

Page 1

Work Order ID: 148544

148544

Parent Item: D2362-3

D2362-3

Parent Item Name: Step Support Bracket

Start Date: 7/27/2016

Required Date: 8/3/2016

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP: G00.05.18Added inspection level 8EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2265 *D2265* Step Bracket		Manufactured	No			160	Each	20.0000	1	4		DAS 33 9-89 16/2/08	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				ST478a		20							
					122090	20							
D2397-1 *D2397-1* Rubber Cushion		Manufactured	No			160	Each	4.0000	1	4		FF AUG 2 5 2016	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				GA		4		B150090	(4)				
					141944	4			(4)				
D2397-3 *D2397-3* Rubber Cushion		Manufactured	No			100	Each	6.0000	1	4		FF AUG 2 5 2016	
				<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					
				GA		6		B150091	(2)				
					141945	6			6				

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
AUG 25 2014				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

DART



RELEASED
98.12.14 KE

DESIGN	DRAWN BY	DART AEROSPACE LTD
BW		HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO.
KE		D2362
DATE		TITLE
98.12.04		STEP SUPPORT BRACKET
A	95.02.15	NEW ISSUE
B	95.03.22	CHANGED RUBBER TO D2397
C	96.01.22	ADD D2362-5
D	97.05.21	ADD D2362-7
E	98.12.04	REDRAWN, ADD 2397-5

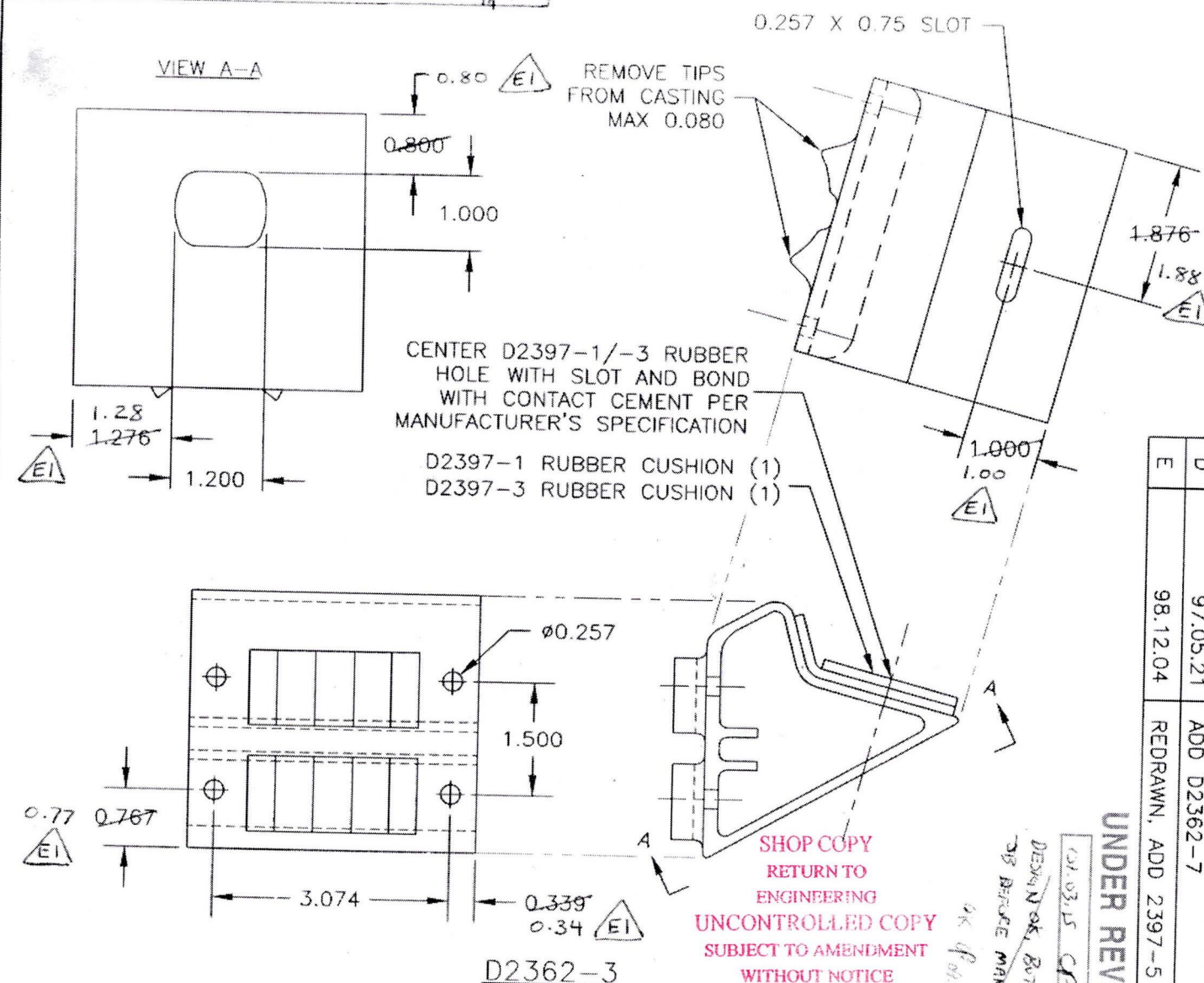
UNDER REVIEW

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 148544 MWS

DESIGN OK, BUT CHECK WITH
OR BEFORE MANUFACTURE

16-07-02

EI 03.10.07 TOLERANCE CHANGE RT

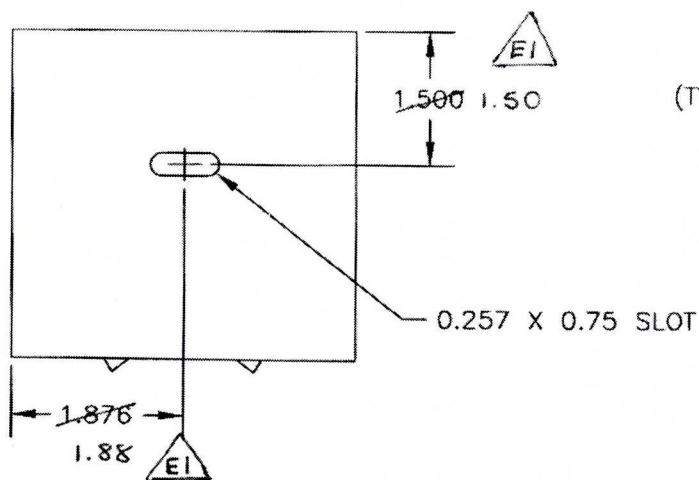


NOTES:
MAKE FROM D2265
FINISH: POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3 BEFORE BONDING
RUBBER IN PLACE
TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED



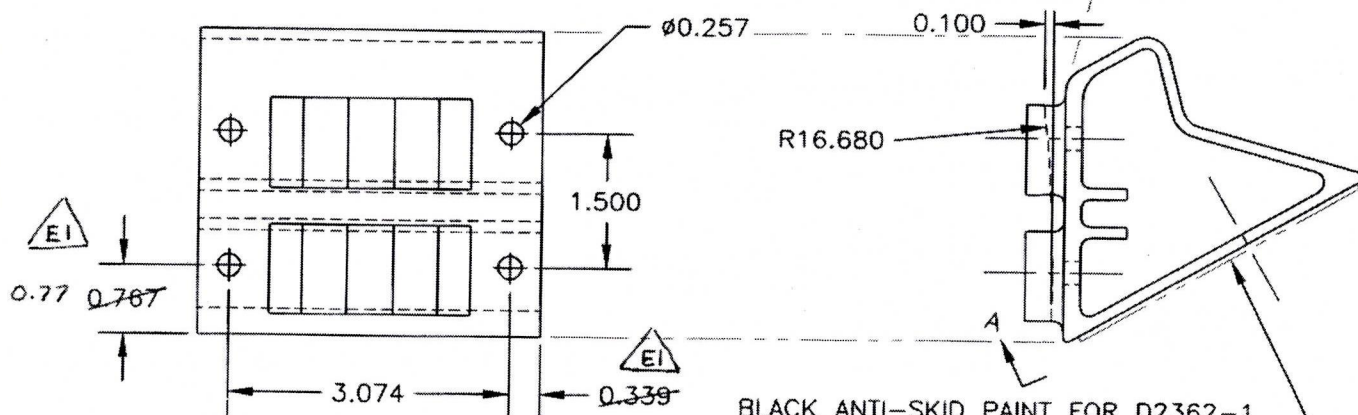
DESIGN	BW	DRAWN BY	CP	DART AEROSPACE LTD
CHECKED	KE	APPROVED	KE	HAWKESBURY, ONTARIO, CANADA
DATE	98.12.04	DRAWING NO.	D2362	REV. E
		TITLE	STEP SUPPORT BRACKET	SHEET 2 OF 3
		SCALE	1:2	

VIEW A-A



MACHINE TO
R1.100
(TYP 2 PLACES)

REMOVE TIPS
FROM CASTING
MAX 0.080



BLACK ANTI-SKID PAINT FOR D2362-1
INSTALL D2397-5 (1) FOR D2362-5

D2362-1 & D2362-5

NOTES:

MAKE FROM D2265

D2362-1: BLACK ANTI-SKID PAINT PER DART QSI 005 4.4

D2362-5: INSTALL D2397-5 RUBBER CUSHION. ALIGN RUBBER HOLE WITH SLOT
AND BOND USING CONTACT CEMENT PER MANUFACTURER'S SPECIFICATION

FINISH: POWDER COAT WHITE (REF. 4.3.5.1) PER QSI 005 4.3

BEFORE ANTI-SKID PAINT OR BEFORE INSTALLING D2397-5

TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

RELEASED
98.12.14
UNDER REVIEW

DESIGNED BY
CP
OR BEING MANUFACTURED
OK (For)

DART



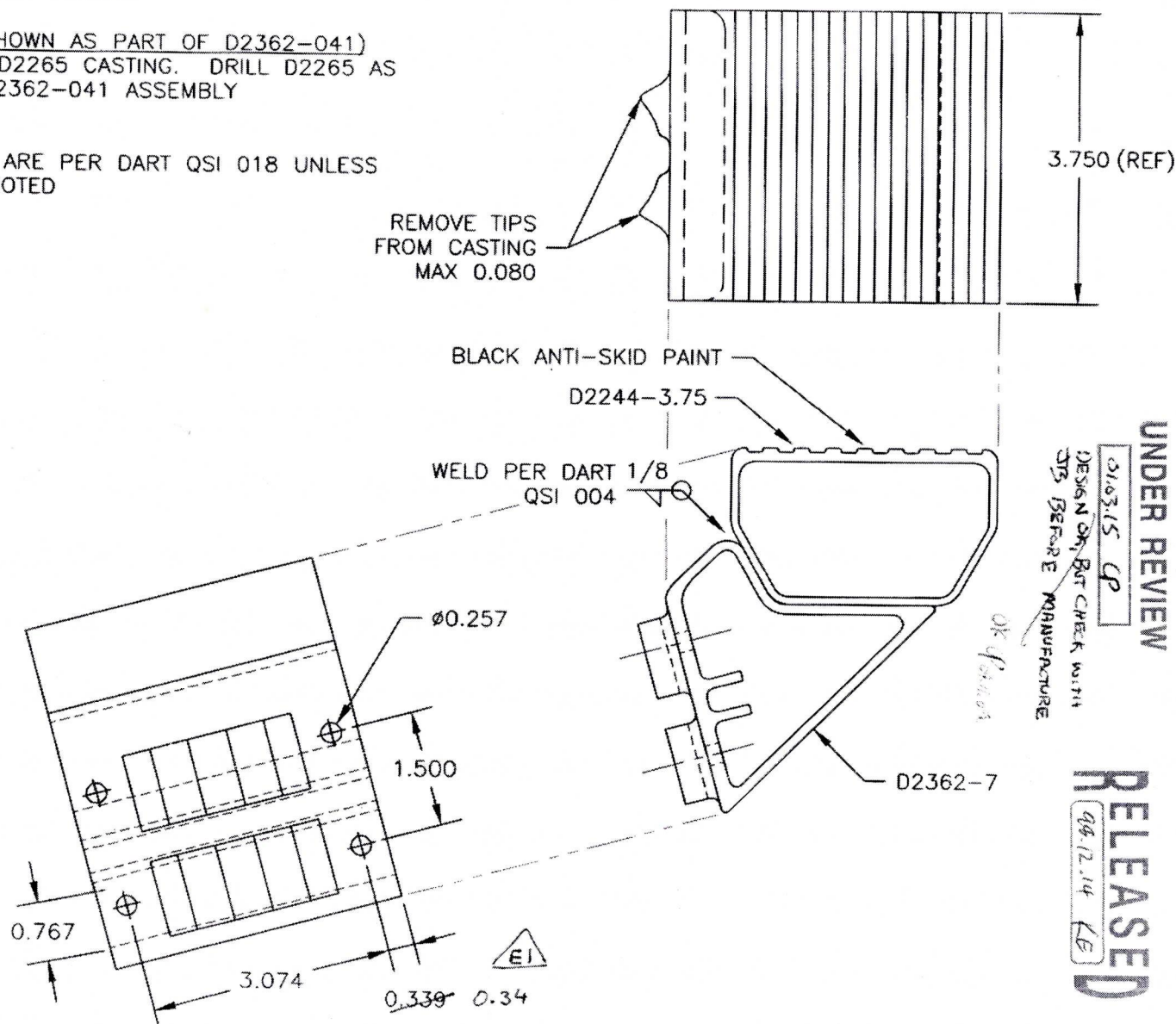
DESIGN	BW	DRAWN BY	CP	DART AEROSPACE LTD
CHECKED	KE	APPROVED	ME	HAWKESBURY, ONTARIO, CANADA
DATE	98.12.04	DRAWING NO.	D2362	REV. E
TITLE	STEP SUPPORT BRACKET	SHEET	3 OF 3	SCALE
				1:2

UNDER REVIEW

01/03/15 CP

DESIGN OK, BUT CHECK WITH
DTS BEFORE MANUFACTURE

RELEASED
98.12.14 KE



D2362-041 (SHOWN)

FINISH: POWDER COAT WHITE (REF. 4.3.5.1) PER
QSI 005 4.3
ANTI-SKID PAINT PER QSI 005 4.4 AFTER
POWDER COATING

D2362-7 (SHOWN AS PART OF D2362-041)

MAKE FROM D2265 CASTING. DRILL D2265 AS
SHOWN IN D2362-041 ASSEMBLY

NOTES:

TOLERANCES ARE PER DART QSI 018 UNLESS
OTHERWISE NOTED